

CLAIMS

WHAT IS CLAIMED IS:

- 1 1. A transmitter comprising:
2 an oscillator enclosed in a metal shield;
3 a Phase Lock Loop (PLL) coupled to the oscillator;
4 a serializer coupled to receive a clock signal from the PLL and to provide
5 serial data; and
6 an electrical-to-optical converter coupled to the serializer to convert the
7 serial data to optical signals.
- 1 2. The transmitter of claim 1, wherein the metal shield is soldered to a ground
2 ring on a printed circuit board.
- 1 3. The transmitter of claim 2, wherein the ground ring is electrically coupled to
2 one or more ground planes of the printed circuit board.
- 1 4. The transmitter of claim 2, wherein the metal shield is comprised at least
2 partially of copper.
- 1 5. The transmitter of claim 2, wherein the metal shield has one or more
2 positioning protrusions that enter into holes in the printed circuit board.

1 6. The transmitter of claim 2, wherein the metal shield has one or more
2 attachment protrusions for soldering the metal shield to the printed circuit board.

1 7. The transmitter of claim 2, wherein the oscillator is a voltage-controlled
2 oscillator.

1 8. A transceiver comprising:
2 a printed circuit board;
3 a receiver coupled to the printed circuit board; and
4 a transmitter coupled to the printed circuit board, the transmitter comprising
5 an oscillator,
6 a phase lock loop coupled to the oscillator, and
7 a metal shield covering the oscillator, the metal shield coupled to a
8 ground ring of the printed circuit board.

1 9. The transceiver of claim 8, wherein the transmitter further comprises:
2 a serializer to receive a clock signal from the phase lock loop and to provide
3 serial data; and
4 a converter coupled to the serializer to convert the serial data to optical
5 signals.

1 10. The transceiver of claim 8, wherein the ground ring of the printed circuit
2 board is coupled to one or more ground planes of the printed circuit board.

1 11. The transceiver of claim 8, wherein the metal shield is comprised at least
2 partially of copper.

1 12. The transceiver of claim 8, wherein the metal shield comprises one or more
2 protrusions for attaching the metal shield to the ground ring.

1 13. The transceiver of claim 8, wherein the metal shield comprises one or more
2 protrusions that assist in aligning the metal shield to the printed circuit board.

1 14. The transceiver of claim 8 further comprising:
2 an electrically-conductive gasket disposed between the metal shield and the
3 ground ring.

1 15. The transceiver of claim 8, wherein the oscillator is a voltage-controlled
2 oscillator.

1 16. A method of reducing clock jitter in a transmitter having an oscillator
2 comprising:
3 attaching the oscillator to a printed circuit board having a ground ring;
4 placing a metal shield around the oscillator, wherein the metal shield is in
5 electrical contact with the ground ring.

1 17. The method of claim 16, wherein attaching the oscillator further comprises:
2 attaching a voltage controlled oscillator to the printed circuit board.
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1 18. The method of claim 16, further comprising:
2 soldering the metal shield to the ground ring.

1 19. The method of claim 18, wherein soldering the metal shield to the ground ring
2 further comprises:
3 soldering one or more protrusions of the metal shield to the ground ring .

1 20. The method of claim 18 further comprising:
2 aligning the metal shield to the printed circuit board by inserting one or more
3 alignment protrusions of the metal shield into one or more holes in the
4 printed circuit board prior to soldering the metal shield to the ground
5 ring.